**Nithin Das, CWID: 10422784, Date: 11/21/19 Assignment W&A 4th Edition, Ch 16, Q 25**

I pledge on my honor that I have not given or received any unauthorized assistance on this

assignment/examination. I further pledge that I have not copied any material from a book, article,

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Signature: NITHIN DAS

Date: 11/21/2019

**Management Overview**

* **Problem Statement**

To determine which professor should be given a raise using Analytical Hierarchy Process.

* **Data Sources**

**Input variables**:

* Pairwise comparison of Teaching, Research and Service
* Pairwise comparison of Professors on Teaching
* Pairwise comparison of Professors on Research
* Pairwise comparison of Professors on Service

* **Model Approach**
* Enter the pairwise comparison matrix in the spreadsheet
* Calculate the normalized matrix for each of the comparison matrix (Professors on teaching, research and service)
* Calculate the weightages by averaging each row of the matrix
* Calculate Total score as matrix multiplication of each professor weightage on teaching, research, service and weightage of each objective
* Determine highest score to determine which professor to be given raise
* Calculate consistency index for each of the comparison matrix
* Find the ratio of Consistency index to random index
* **Results**

25A) Professor 2 should receive a bigger raise since the calculated total score is higher for prof 2.

25B) Analytical Hierarchy Process does not indicate how large the raise should be

25C) Since CI/RI ratio is less than 0.10, all the comparison matrixes are consistent